

IN THE CLAIMS:

1. (currently amended) An ultrasonic imaging method comprising the steps of:

generating a reference image of a subject;

storing the reference image and a scan condition used to acquire said reference image;

reading said reference image and said scan condition, said reference image comprising a region of treatment encompassed by a region of interest before providing medical treatment to the subject;

setting the scan condition as a current scan condition before providing medical treatment;

acquiring a real-time image of the subject after providing medical treatment to the subject;

automatically defining the region of interest in said real-time image encompassing the region of treatment after providing medical treatment to the subject; [[and]]

calculating a correlation coefficient between a portion outside of the region of interest in said reference image and a portion outside of the region of interest in the real-time image;

displaying on an ultrasonic image display device said reference image and said real-time image side by side, the correlation coefficient, and in a hold manner, a maximum value of the correlation coefficient from a beginning of acquisition of said real-time image up to the present;
and

adjusting an orientation of an ultrasonic probe against the subject so that the correlation coefficient becomes equal to the maximum value.

2. (original) The ultrasonic imaging method of Claim 1, further comprising the steps of:

calculating a correlation coefficient between said reference image and said real-time image throughout or partially; and

displaying the calculated correlated coefficient.

3. (canceled).

4. (previously presented) The ultrasonic imaging method of claim 2, further comprising a step of:

calculating a correlation coefficient for a region outside of the region of interest defined in one of said reference image and said real-time image

5. (previously presented) The ultrasonic imaging method of claim 2, further comprising a step of:

calculating a correlation coefficient for a correlation comparison region defined in one of said reference image and said real-time image.

6. (original) The ultrasonic imaging method of claim 1, further comprising a step of:

displaying said reference image and said real-time image superimposed in response to a command by an operator.

7. (previously presented) The ultrasonic imaging method of claim 1, further comprising the steps of:

storing a measurement result for a target region in said reference image; and

reading said measurement result and displaying said measurement result when displaying said reference image.

8. (original) The ultrasonic imaging method of claim 1, further comprising a step of:

storing said reference image and said scan condition in a server on a network.

9. (currently amended) An ultrasonic diagnostic apparatus comprising:

an ultrasonic probe;

a transmitting/receiving device for driving said ultrasonic probe to transmit ultrasonic pulses into a subject and receive ultrasonic echoes from inside the subject and outputting received data;

an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data, wherein said ultrasonic image producing device is configured to produce a real-time image, said real-time image acquired after providing medical treatment to the subject;

a reference image storage device for storing said reference image, said reference image comprising a region of interest encompassing a region of treatment before providing medical treatment to the subject;

a scan condition storage device for storing a scan condition for said reference image;

an automatic scan condition setting device for reading said scan condition and setting said scan condition as a current scan condition before providing medical treatment;

an automatic region defining device for defining in said real-time image the region of interest encompassing the region of treatment after providing medical treatment to the subject; [[and]]

a correlation calculating device for calculating a correlation coefficient between a portion outside of the region of interest in said reference image and a portion outside of the region of interest in the real-time image;

an ultrasonic image display device for reading said reference image and displaying said reference image and said real-time image side by side; and

a correlation coefficient display device for displaying the correlation coefficient, and in a hold manner, a maximum value of the correlation coefficient from the beginning of acquisition of said real-time image up to the present;

wherein said ultrasonic probe is configured to be adjusted against the subject so that the correlation coefficient becomes equal to the maximum correlation coefficient.

10. (original) The ultrasonic diagnostic apparatus of claim 9, further comprising:

a correlation coefficient calculating device for calculating a correlation coefficient between said reference image and said real-time image throughout or partially; and

a correlation coefficient display device for displaying the calculated correlation coefficient.

11. (currently amended) An ultrasonic diagnostic apparatus comprising:

an ultrasonic probe;

a transmitting/receiving device for driving said ultrasonic probe to transmit ultrasonic pulses into a subject and receive ultrasonic echoes from inside the subject and outputting received data;

an ultrasonic image producing device for producing an ultrasonic reference image from the resulting received data;

a reference image storage device for storing said reference image, said reference image comprising a region of treatment encompassed by a region of interest before providing medical treatment to the subject;

a scan condition storage device for storing a scan condition for said reference image;

an automatic scan condition setting device for reading said scan condition and setting said scan condition as a current scan condition before providing medical treatment;

a scan plane angular scanning device for acquiring a plurality of real-time images at different scan plane angles, said plurality of real-time images acquired after providing medical treatment;

a correlation coefficient calculating device for calculating a correlation coefficient between said reference image and each of said real-time images throughout or partially;

an automatic region defining device for defining in said plurality of real-time images the region of treatment encompassed by the region of interest after providing medical treatment to the subject; [[and]]

an ultrasonic image display device for displaying said reference image and one of said real-time images having a highest correlation coefficient side by side, and

a correlation coefficient display device for displaying said highest correlation coefficient.

12. (canceled)

13. (previously presented) The ultrasonic diagnostic apparatus of claim 11, further comprising:

a correlation coefficient maximum value display device for displaying in a hold manner a maximum value of the correlation coefficient from a beginning of acquisition of one of said real-time images up to the present.

14. (previously presented) The ultrasonic diagnostic apparatus of claim 11, wherein said correlation coefficient calculating device calculates a correlation coefficient for a region outside of the region of interest defined in one of said reference image and one of said real-time images.

15. (previously presented) The ultrasonic diagnostic apparatus of claim 11, wherein said correlation coefficient calculating device calculates a correlation coefficient for a correlation comparison region defined in one of said reference image and one of said real-time images.

16. (original) The ultrasonic diagnostic apparatus of claim 9, further comprising:

a combined-display device for displaying said reference image and said real-time image superimposed in response to a command by an operator.

17. (previously presented) The ultrasonic diagnostic apparatus of claim 9, further comprising:

a measurement result storage device for storing a measurement result for a target region in said reference image; and

a measurement result display device for reading said measurement result and displaying said measurement result when displaying said reference image.

18. (previously presented) The ultrasonic diagnostic apparatus of claim 9, wherein said reference image storage device and said scan condition storage device reside in said ultrasonic diagnostic apparatus, and in a server on a network.

19. (previously presented) The ultrasonic diagnostic apparatus of claim 9, wherein said reference image storage device and said scan condition storage device reside not in said ultrasonic diagnostic apparatus but in a server on a network.